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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/065,105

09/18/2002

Chien-Shou Chen

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06/09/2005

NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)

P.O. BOX 506

MERRIFIELD, VA 22116

EXAMINER

AGUSTIN, PETER VINCENT

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,105

Applicant(s)

CHEN, CHIEN-SHOU

Examiner

Peter Vincent Agustin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. A replacement drawing was received on April 11, 2005. This drawing is acceptable.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyata (US 6,052,347) in view of the Applicant's admitted prior art.

In regard to claim 1, Miyata discloses a writing power control method (see title) of a compact disc drive for controlling a writing power used for writing data onto a compact disc utilizing a constant angular velocity mode (see column 2, lines 16-23), the writing power control method comprising: (a) dividing said compact disc into a plurality of writing zones (ZONE 1, ZONE 2 & ZONE 3 in Figure 5) according to a plurality of reference linear velocities (see vertical axis of Figure 4), each of said plurality of reference linear velocities having a corresponding reference writing power (see vertical axis of Figure 5); (b) obtaining a writing linear velocity (any LINEAR VELOCITY value on ZONE 1 of Figure 4) of desired data; (c) determining a target writing zone (ZONE 1 in Figure 6) within said plurality of writing zones of said compact disc and two reference linear velocities (Figure 4: V_r & $(R_2/R_1)V_r$) of said target writing zone according to said writing linear velocity of desired data; and (d) determining an

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optimum writing power (Figure 7: Pm1 & Pm2) of said desired data according to the corresponding reference writing powers of said two reference linear velocities.

However, in regard to claim 1, Miyata does not explicitly disclose: that each of said plurality of reference linear velocities have a corresponding reference reflected pulse level; determining a target reflected pulse level of said desired data according to the corresponding reference reflected pulse levels; performing a running optimum power control (ROPC) procedure with said optimum writing power and said target reflected pulse level of said desired data for writing said desired data onto said compact disc; and that a same constant angular velocity is utilized in each of said plurality of writing zones while writing said desired data onto said compact disc.

The Applicant's admitted prior art discloses determining a target reflected pulse level of desired data according to a corresponding reference reflected pulse level and performing a running optimum power control (ROPC) procedure with an optimum writing power and said target reflected pulse level of said desired data for writing said desired data onto a compact disc (see paragraph 7). It would have been obvious to one of ordinary skill in the art at the time of the invention by the Applicant to have added the steps of determining a target reflected pulse level and performing a running optimum power control procedure to the writing power control method of Miyata as suggested by the Applicant's admitted prior art, the motivation being to ensure the accuracy of the etching on the compact disc. It should be noted that the claimed plurality of reference linear velocities each having a corresponding reference reflected pulse level would be the inherent result of the obvious combination above.

The Applicant's admitted prior art discloses (see paragraphs 9 & 10) the use of a constant angular velocity (CAV) control mode, i.e., a same constant angular velocity is utilized in each of a plurality of writing zones while writing desired data onto a compact disc, as claimed. It would have been obvious to one of ordinary skill in the art at the time of the invention by the Applicant to have applied the teachings of the Applicant's admitted prior art to the method of Miyata, the motivation being to increase writing velocity (see paragraph 8).

In regard to claim 2, Miyata discloses that said compact disc comprises a power calibration area (Figure 6: OPC AREA) for performing a power calibration, said plurality of reference linear velocities comprising a first reference linear velocity (Figure 4: V_r) and a second reference linear velocity (Figure 4: $(R_2/R_1)V_r$), the reference writing powers comprising a first reference writing power (Figure 5: P_0) with respect to said first reference linear velocity and a second reference writing power (Figure 5: $(R_2/R_1)P_0$) with respect to said second reference linear velocity, and the writing power control method further comprises: controlling a spin velocity of said compact disc for making a linear velocity of said power calibration area equal to said first reference linear velocity so as to determine said first reference writing power by performing said power calibration at said power calibration area; controlling said spin velocity of said compact disc for making said linear velocity of said power calibration area equal to said second reference linear velocity so as to determine said second reference writing power by performing said power calibration at said power calibration area; determining other reference linear velocities besides said first reference linear velocity and said second reference linear velocity according to said first reference linear velocity and said second reference linear velocity (Figure 4: $(R_3/R_2)V_r$ & $(R_4/R_3)V_r$); and determining other reference writing powers besides

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said first reference writing power and said second reference writing power according to said first reference writing power and said second reference writing power (Figure 5: $(R3/R2)P0$ & $(R4/R3)P0$).

In regard to claim 3, Miyata discloses performing a writing test at said power calibration area with each reference linear velocity and each corresponding reference writing power (abstract, lines 5-8).

However, in regard to claim 3, Miyata does not explicitly disclose reading a plurality of reflected pulses thereof for determining a plurality of said reference reflected pulse levels corresponding to the reference linear velocities.

The Applicant's admitted prior art discloses reading reflected pulses for determining a reference reflected pulse level (see paragraph 7). It would have been obvious to one of ordinary skill in the art at the time of the invention by the Applicant to have added the step of reading a plurality of reflected pulses for determining a plurality of reference reflected pulse levels to the writing power control method of Miyata as suggested by the Applicant's admitted prior art, the motivation being to ensure the accuracy of the etching on the compact disc. It should be noted that the claimed plurality of said reference reflected pulse levels corresponding to the reference linear velocities would be the inherent result of the obvious combination above.

In regard to claim 4, Miyata discloses determining said optimum writing power of said desired data according to said writing linear velocity of said desired data (abstract, lines 5-15), said two reference linear velocities (Figure 4: V_r & $(R2/R1)V_r$) of said target writing zone, the corresponding reference writing powers (Figure 5: $P0$ & $(R2/R1)P0$) of said two reference linear velocities.

However, in regard to claim 4, Miyata does not explicitly disclose determining said target reflected pulse level of said desired data according to said writing linear velocity of said desired data, said two reference linear velocities of said target writing zone, the corresponding reference reflected pulse levels of said two reference linear velocities. It should be noted, however, that the claim 4 limitation not explicitly disclosed by Miyata would be the inherent result of the obvious combination above.

Claims 5 & 6 have limitations that are similar to those of claims 1-4; thus, they are rejected on the same basis.

Claims 7, 8 & 10 have limitations that are similar to those of claims 1-4; thus, they are rejected on the same basis. Furthermore, in regard to claim 7, Miyata discloses (a) calculating a plurality of reference linear velocities (shown in Figure 4) based on a constant angular velocity (Figure 3, vertical axis) at different radii (Figure 3, horizontal axis) of said compact disc. Furthermore, in regard to claim 8, Miyata discloses the claimed "distributing manner" of said plurality of reference linear velocities (Figure 4).

In regard to claim 9, Miyata does not explicitly disclose determining other reference reflected pulse levels with each of said other reference writing powers and the corresponding reference linear velocity. It should be noted, however, that this limitation would be the inherent result of the obvious combination above.

Response to Arguments

4. Applicant's arguments filed April 11, 2005 have been fully considered but they are not persuasive.

a. The Applicant argues on page 11, paragraph 4 that “the modified teachings still do not anticipate the amended claims because, among other reasons, the current claims state that a CAV mode is part of the method, and that the same angular velocity is used in all of the plurality of zones”. The Examiner disagrees. As noted above, claim 1 is rejected using the combination of Miyata and the Applicant’s admitted prior art. Miyata is relied upon to show that a CAV mode is part of the method (see column 2, lines 16-23). The Examiner acknowledges that Miyata does not explicitly disclose that the same angular velocity is used in all of the plurality of zones. However, as noted in the rejection, the Applicant’s admitted prior art is relied upon to cure this deficiency.

b. The Applicant argues on page 11, paragraph 4 that “attempting to modify Miyata to utilize an incompatible CAV disc not only is not suggested in the reference, but doing so would change a principle of operation of the disclosure by changing the format and method used and is therefore not obvious”. The Examiner disagrees with the assertion that modifying Miyata would not have been obvious, for the following reasons.

First, as noted in the rejection, the Applicant’s admitted prior art discloses (see paragraphs 9 & 10) the use of a constant angular velocity (CAV) control mode, i.e., a same constant angular velocity is utilized in each of a plurality of writing zones while writing desired data onto a compact disc, as claimed; and it would have been obvious to one of ordinary skill in the art at the time of the invention by the Applicant to have applied the teachings of the Applicant’s admitted prior art to the method of Miyata, the motivation being to increase writing velocity (see paragraph 8).

Second, the Applicant has not disclosed that utilizing a same constant angular velocity in each zone, as claimed, provides an advantage over the zone-varying CAV taught by Miyata, nor that this claimed feature is used for a particular purpose, or solves a problem related to the zone-varying CAV taught by Miyata. The Applicant's invention is directed to controlling power in discs having different linear velocities for different zones divided in the radial direction, one example of which happens to be a disk rotated at a constant angular velocity. As noted above, Miyata discloses these features, but does not disclose utilizing a same constant angular velocity in each zone. While Miyata teaches zone-varying CAV, one of ordinary skill in the art would have recognized that the teachings of Miyata would have been equally applicable to discs having a same constant angular velocity in all zones because the zone-varying CAV of Miyata and the claimed non-varying CAV are both applied to discs having different linear velocities for different zones. The Applicant's invention would have been expected to form equally well with either CAV technique.

Finally, it should be noted that the invention of Miyata has a main purpose of optimizing recording power (see column 1, lines 7-10), which is the same with the Applicant's invention. The invention of Miyata has a further purpose of determining optimum recording power throughout a modified constant linear velocity (ZCLV), i.e., a technique that utilizes zone-varying CAV, which ZCLV technique is known in the art to be an improvement over CLV and CAV techniques. Therefore, in a case where this improvement is not desired, it would have been an obvious expedient to omit the ZCLV feature. (See MPEP 2144.04 [R-1] section II-A: Omission of an element and its function

is obvious if the function of the element is not desired). This omission of the ZCLV feature will result in utilizing the conventional rotation techniques, e.g., the claimed “same constant angular velocity is utilized in each of a plurality of writing zones”.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

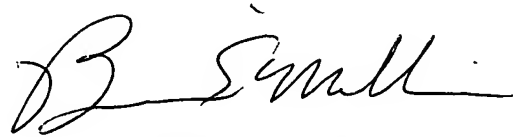
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is 571-272-7567. The examiner can normally be reached on Monday-Friday 9:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Vincent Agustin
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A handwritten signature in black ink, appearing to read "B. E. Miller", written in a cursive style.

BRIAN E. MILLER
PRIMARY EXAMINER